IN THE CLAIMS:

1. *(currently amended)* A method of controlling return path ingress comprising the steps of:

(a) automatically detecting information on channel usage to distinguish active sub-bands from inactive sub-bands by performing the steps of:

(i) estimating a power spectrum density (PSD) of a return path signal;

(ii) correlating the PSD with a set of stored PSDs;

(iii) determining a frequency at peak correlation; and

(iv) defining the frequency band of step (iii) as an active sub-band;

~~(a)~~ (b) detecting the presence of return path ingress in the active sub-band of the return frequency band; and

~~(b)~~ (c) mitigating the return path ingress substantially near the subscriber location.

2. *(currently amended)* The method described in claim 1 wherein the detecting of step ~~(a)~~ (b) occurs at the head-end.

3. *(currently amended)* The method as described in claim 1 wherein the detecting of step ~~(a)~~ (b) occurs substantially near the subscriber location.

4. - 7. ***cancelled***

8. *(currently amended)* The method described in claim 1 wherein the detecting of step ~~(a)~~ (b) further comprises the steps of:

(i) measuring an average return path signal power in the active sub-band of the return frequency band;

(ii) comparing the average return path signal power to a detection threshold; and

(iii) determining the presence of ingress in the active sub-band of the return frequency band based on the result of the comparison.

9. *(original)* The method described in claim 8 further characterized in that the ingress is declared present when the average power exceeds the detection threshold.

10. *(currently amended)* The method described in claim 1 wherein the mitigating of step ~~(a)~~ (c) is accomplished by attenuating the return path signal.

11. *(original)* The method of claim 10 wherein the attenuation is performed based on a power-level equalization algorithm.

12. *(currently amended)* The method described in claim 1 wherein the mitigating of step ~~(a)~~ (c) is accomplished by isolating the return path signal.

13. - 15. ***cancelled***

03 cont.

16. *(currently amended)* In a cable network environment having a head-end and a subscriber location with return path communication being accomplished in a return frequency band, a method of detecting and mitigating return path ingress, the method comprising the steps of:

(a) retrieving information on channel usage to distinguish active sub-bands from inactive sub-bands, wherein channel usage is detected automatically at a location substantially near the subscriber location by:

(i) estimating a power spectrum density of a return path signal;

(ii) correlating the PSD with a set of stored PSDs;

(iii) determining a frequency at peak correlation; and

(iv) determining a frequency sub-band in use;

(b) detecting the presence of ingress in active sub-bands of the return path; and

(c) mitigating the return path ingress at a location near the subscriber location.

17. - 19. ***cancelled***

20. *(currently amended)* The method described in claim 16 wherein the active sub-band is in use by an in-home device.

21. *(currently amended)* The method described in claim 16 wherein the active sub-band is in use by a communications gateway.

22. *(currently amended)* In a cable network environment having a head-end and a subscriber location with return path communications being accomplished in a return frequency band, a method of preventing in-home signals from entering an active sub-band of the return path at a location near the subscriber location, the method comprising the steps of:

(a) determining the active sub-band wherein the active sub-band is in use by a device located near the subscriber location, the determining using the steps of:

(i) estimating a power spectrum density of a return path signal;

(ii) correlating the PSD with a set of stored PSDs;

(iii) determining a frequency at peak correlation; and

(iv) determining a frequency sub-band in use;

(b) monitoring an in-home signal present in the active sub-band; and

(c) isolating the in-home signal when the in-home signal is above a predetermined threshold.

23. *(original)* In a cable network environment having a head-end and a subscriber location with return path communications being accomplished in a return frequency band, a method of detecting channel usage at a location near the subscriber location, the method comprising the steps of:

(a) estimating the spectrum of an in-home signal;

(b) correlating the spectrum with a set of stored spectra;

(c) determining a frequency band in use by an in-home device from the result of the correlation.

24. - 37. ***cancelled***